Claims

1. A method of determining patient compliance, comprising providing a medication with a detectable marker to be taken by the patient, and subsequently analyzing the patient's breath to confirm the presence of said marker and thus the taking of said medication.

2. The method of claim 1 wherein the medication itself comprises said detectable marker.

3. The method of claim 1 wherein the marker is an odorous substance.

4. The method of claim 3 wherein the patient's breath is analyzed to confirm the presence of said marker by sensor technology selected from semiconductor gas sensor technology, conductive polymer gas sensor technology, or surface acoustic wave gas sensor technology.

5. The method of claim 4 wherein the sensor technology produces a unique electronic fingerprint to characterize the marker such that the presence and concentration of the marker is determined.

6. The method of claim 1 wherein the marker is a flavor ingredient selected from trans-Anethole (1-methoxy-4-propenyl benzene) - anise; Benzaldehyde (benzoic aldehyde) - bitter almond; Butyl isobutyrate (n-butyl 2, methyl propanoate) - pineapple; Cinnamaldehyde (3-phenylpropenal) - cinnamon; Citral (2-trans-3, 7-dimenthyl-2, 6-octadiene-1-al) - citrus; Menthol (1-methyl-4-isopropylcyclohexane-3-ol) - menthol; and alpha-Pinene (2, 6, 6-trimethylbicyclo-(3,1,1)-2-heptene) - pine.

7. The method of claim 1 wherein the patient's breath is analyzed to confirm the presence of said marker by a spectrophotometer.

8. The method of claim 1 wherein the patient's breath is analyzed to confirm the presence of said marker by a mass spectrometer.

9. The method of claim 1 wherein the marker is an additive combined with the medication.

10. The method of claim 1 wherein the marker is a coating on the medication.

11. The method of claim 10 wherein a substance to stimulate salivation is included with the marker.

12. The method of claim 1 wherein the marker is included with a liquid medication.

13. The method of claim 1 wherein the marker is included with a pulmonary delivered medication.

14. The method of claim 1 wherein the marker is included with an intranasal delivered medication.

15. The method of claim 1 wherein the marker is included with intravenously delivered medication.

16. The method of claim 1 further comprising the step of recording data resulting from analysis of the patient's breath.

17. The method of claim 1 further comprising the step of transmitting data resulting from analysis of the patient's breath.

18. The method of claim 1 wherein the analysis of the patient's breath includes comparing the marker sensed in the patient's breath with a predetermined signature profile of a specific marker.

19. The method of claim 18 wherein the predetermined signature profile of a specific marker is associated with a specific drug.

20. The method of claim 18 wherein the predetermined signature profile of a specific marker is associated with a class of drugs.

21. The method of claim 1 further comprising the step of capturing the patient's breath in a vessel prior to analysis.

22. The method of claim 1 further comprising the step of dehumidifying the patient's breath prior to analysis.

23. The method of claim 1 wherein the marker first reacts with enzymes in the patient's mouth to be detectable.

24. The method of claim 1 wherein the marker first reacts with acids in the patient's stomach to be detectable.

25. The method of claim 1 wherein the marker is absorbed in the patient's gastrointestinal tract and excreted in the lungs.

26. The method of claim 1 wherein the data resulting from analysis of the patient's breath includes marker concentration and, thus, medication concentration.

27. The method of claim 1 further comprising the step of identifying a baseline marker spectrum for the patient prior to the patient's taking of the medication.

28. The method of claim 1 wherein said analysis further includes detecting exhalation of the patient's breath with a sensor.

29. A method of determining patient compliance, comprising

providing a medication with a detectable marker to be taken by the patient, and

subsequently analyzing the patient utilizing transdermal detection to confirm the presence of said marker and thus the taking of said medication.

30. A method of determining patient compliance, comprising

providing a medication with a detectable marker to be taken by the patient, and

subsequently analyzing the patient utilizing reverse iontophoresis detection to confirm the presence of said marker and thus the taking of said medication.

31. A method of producing medication which is detectable for patient compliance, comprising

identifying a detectable marker substance, and

producing a medication combined with said detectable marker substance to be taken by the patient whereby subsequent analysis of the patient's breath will confirm the presence of said marker substance and thus the taking of said medication.

32. An apparatus for rapidly determining patient compliance with medications, said medications having marker substances associated therewith, comprising

(a) a sensor having a surface exposed to the patient's breath and comprising a material selectively absorptive of a group of chemical substances of which said marker substance is a member;

(b) analysis means, coupled to the sensor, for producing an electrical signal indicative of the presence of said marker substance.

33. The apparatus of claim 32, wherein the analysis means are further operative to determine the approximate concentration of the marker substance.

34. The apparatus of claim 33, wherein the sensor comprises a surface acoustic wave device.

35. An apparatus for rapidly determining patient compliance with medications, said medications having marker substances associated therewith comprising:

(a) means for receiving air exhaled by the patient; and

(b) means for measuring the marker substance concentration in said exhaled air.

36. The apparatus of claim 35 wherein said means for measuring the marker substance comprises sensor technology selected from semiconductor gas sensor technology, conductive polymer gas sensor technology, or surface acoustic wave gas sensor technology.

37. The method of claim 1 wherein the marker is included with transdermally delivered medication.

38. A method of detecting medication in a patient comprising:

analysing the patient's breath to detect the presence of a predetermined marker; and

identifying the medication in the patient which is associated with the detected marker.